UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
John Doyle et al.
Serial No.: 10/507,157
Filed: October 13, 2005
For: INFORMATION COMMUNICATION CONTROLLER INTERFACE APPARATUS AND METHOD

April 24, 2009

Art Unit: 2184
Examiner: Mamo, Elias
Docket No.: SC0979EK US

Certificate of Submission

I hereby certify that this correspondence is being submitted to the U.S.P.T.O., Alexandria, VA.

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June 8, 2009
Date of Submission

/Dee Matocha/
Signature

Dee Matocha
Printed Name of Person Signing Certificate

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VA 22313
BOARD OF PATENT APPEALS & INTERFERENCES:

This brief is filed in the matter of the Appeal to the Board of Appeals and Interferences of the rejection of the claims of the above-referenced application for patent.

REAL PARTY IN INTEREST

The present application is wholly assigned to FREESCALE SEMICONDUCTOR, INC., with its headquarters in Austin Texas.

RELATED APPEALS AND INTERFERENCES

Appellants are unaware of other appeals or interferences which will directly affect, be directly affected by, or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 1-5, 7-10 and 12 are pending. Claims 1-12 were originally filed; Claims 6 and 11 was canceled during prosecution.

Claims 1-5, 7-10 and 12 stand rejected under 35 U.S.C. 103(a) as being obvious over US patent no. 6, 963, 586 (hereinafter “Henriksson et al.”) in view of US patent no. 6, 515, 993 (hereinafter “Williams et al.”) and US patent no. 5, 732, 074 (hereinafter “Spaur et al.”).

All of the above rejections are being appealed.

STATUS OF AMENDMENTS

Amendment to claim 1 was entered on February 12, 2009 in response to a Final Rejection dated December 12, 2008. There have been no amendments since that time.

SUMMARY OF CLAIMED SUBJECT MATTER

In the field of automotive network communications, different communications protocols are employed in a vehicle. One example of a communications network used in relation to automotive applications is a Control Area Network (CAN). However, multiple independent communications buses are known to be connected to each other via an information controller interface or gateway device, the independent communications buses employing different communications protocols. For example, in a simple implementation, a first data bus may operate under a first communications protocol and be coupled, via the gateway device, to a number of different data buses operating under respective communications protocols including, for example, a second data bus operating under a second communications protocol. Information is communicated, in data frames, over the first data bus to the gateway device for subsequent communication over one or more of the other data buses.

Each frame comprises a data part, a frame identifier and ancillary information. In order to make most efficient use of a data frame, a node in the network tries to make maximum use of the data part of the frame. This is achieved by packing of constituent pieces of data respectively relating to different data buses into the data part of the frame. In order to support this practice, the frame is transmitted with pre-defined identifiers that, when received by the gateway device, identify the position and size of each constituent piece. Upon receipt of the data frame, the gateway device typically determines the sizes and locations of the constituent pieces within the data frame, unpacks the constituent pieces or data sets, transposing the data sets as required. The gateway device then packs the data sets into respective other, new or already created data frames, prior to onward transmission of the unpacked data sets on the respective destination buses in accordance with respective protocols.

Implementing such operations is typically achieved through software, requiring expensive memory to support the software code. Furthermore, as the number of types of data sets that need to be supported increases, central processing unit (CPU) resources required increases as well.

It is therefore desirable to provide a communications controller interface or gateway device that operates faster than existing interfaces or gateways in transferring

data sets between buses so as to minimise message latency, while reducing memory requirements and/or demands on the CPU.

In one embodiment, as set forth in claim 1, an automotive controller for an automotive communication system has at least one communication bus. Examples of the at least one communications buses is shown in FIG. 3 of Appellants' specification as buses 5, 6, 7, and 8. The bus employs informational units, shown in FIG. 1 of Appellants' specification as a data frame 10, the date frame 10 having an identifier portion 14 and a data portion 12 corresponding to the identifier portion 14. Page 4, line 19 – page 5, line 4 of Appellants' specification describe this feature in relation to a communications controller interface or gateway 1. The information controller comprises an identifier look-up element 20 (see page 5, lines 9-12 of Appellants' specification) for sending a predetermined program selector 26 to a signal handler 30 (see page 6, lines 6-9 of Appellants' specification). The identifier look-up element 20 sends the program selector 26 to the signal hander 30 upon determination that the identifier portion 14 of a received data frame 10 corresponds to a predetermined identifier associated with the predetermined program selector. An example of such determination is described on page 5, lines 16-23 and page 6, lines 6-9 of Appellants' specification. As explained on page 6, lines 9-16 and page 10, lines 5-7 of Appellants' specification, the program selector 26 **defines** an operation to be performed on the data portion 12 by the signal handler 30. The identifier look-up element 20 further comprises a look-up table 22 for storing a list of identifiers (see FIG. 1 and page 5, lines 20-21 of Appellants' specification). The identifier look-up element 20 searches the look-up table 22 in order to find the predetermined identifier (see page 5, line 16-20 of Appellants' specification) and thus the predetermined program selector corresponding to the identifier portion (see page 6, lines 6-9 and lines 13-14 of Appellants' specification).

In another embodiment, as set forth in claim 12, a method is provided for using an automotive information controller for an automotive communication system having at least one communication bus. Examples of the at least one communications buses is shown in FIG. 3 of Appellants' specification as buses 5, 6, 7, and 8. The bus employs information units, as shown in FIG. 1 of Appellants' specification as a data frame 10, the data frame 10 having an identifier portion 14 and a data portion 12 corresponding to the identifier portion 14. Page 4, line 19 – page 5, line 4 of Appellants' specification describe this feature in relation to a communications controller interface or gateway 1. The method comprises receiving the identifier portion at an identifier look-up element 20 (see

page 5, lines 16-18 and page 9, line 32 – page 10, line 1 of Appellants' specification). The identifier look-up element 20 further comprises a look-up table 22 for storing a list of identifiers (see FIG. 1 and page 5, lines 20-21 of Appellants' specification). The identifier look-up element 20 searches the look-up table 22 in order to find a predetermined identifier (see page 5, line 16-20 and page 10, lines 1-3) of Appellants' specification) and the predetermined program selector corresponding to the identifier portion (see page 6, lines 6-9 and lines 13-14 of Appellants' specification). The program selector then sends the program selector 26 to a signal hander 30 upon determination that the identifier portion of a received data frame 10 corresponds to the predetermined identifier associated with the predetermined program selector. An example of such determination is described on page 5, lines 16-23 and page 6, lines 6-9 of Appellants' specification. In particular, communication of the program selector 26 is described at page 10, lines 3-5 of the Appellants' specification. An operation is then performed on the data portion based upon the program selector (see page 6, lines 9-16 and page 10, lines 5-7 of Appellants' specification).

GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

1. Are claims 1-5, 7-10, and 12 non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.?

ARGUMENT

Arguments for Ground 1

Claims 1-5, 7-10, and 12 are non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

Claim 1

Claim 1 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

Henriksson et al., Williams et al. and Spaur et al., either alone or in combination, do not disclose or suggest an automotive information controller for an automotive communication system having at least one communication bus having an information unit with an identifier portion and a data portion corresponding to said identifier portion, said information controller comprising an identifier look-up element for sending a predetermined program selector to a signal handler upon determination that the identifier portion of a received information unit corresponds to a predetermined identifier associated with the predetermined program selector, wherein the program selector defines an operation to be performed on the data portion by the signal handler; and said identifier look-up element further comprises a look-up table for storing a list of identifiers, said identifier look-up element searching the look-up table in order to find said predetermined identifier and said predetermined program selector corresponding to said identifier portion, all as recited in claim 1.

Appellants respectfully submit that the Final Office Action dated December 12, 2008 does not set forth a prima facie case of obviousness for claim 1 for at least the reasons as set forth below in subsections i-vi.

i. Final Office Action Mischaracterizes Henriksson et al.

As to claim 1, the Final Office Action states that Henriksson et al. discloses an information controller (**not automotive**) for a communications system having at least one communication bus (col. 4, lines 9-11) having an information unit with an identifier portion and a data portion corresponding to said identifier portion (col. 3, lines 17-18). The Final Office Action also states that the information controller comprises an identifier look-up element (field extraction unit 22 **and** compare unit 24; col. 9, lines 21-24) for

sending a predetermined program selector to a signal handler upon determination that the identifier portion of a received information unit corresponds to a predetermined identifier associated with the predetermined program selector (col. 4, lines 36-44). The Final Office Action further states that said identifier look-up element comprises a look-up table (look-up table 54 in FIG. 5) for storing a list of identifiers (col. 7, lines 32-33). The Final Office Action also states that Henriksson et al. discloses that said look-up [table] element searches the look-up table in order to find said predetermined identifier and said predetermined program selector corresponding to said identifier portion (col. 3, lines 50-57).

The Advisory Action of March 2, 2009 elaborates on some aspects of the above rejection.

In the Amendment after the Final Office Action of February 12, 2009, the Appellants argued that many of the arguments put forward by the Examiner were incorrect. Of the arguments submitted by the Appellants, a number of submissions by the Appellants were disputed by the Examiner in the Advisory Action. These are set out below.

In the Amendment after the Final Office Action of February 12, 2009, Appellants argued that neither the field extraction unit 22 nor the compare unit 24 possess look-up functionality. Lines 1-4 of the Advisory Action disagree with this statement, suggesting that "Henriksson et al. '586 disclose extracting a field from the header information and comparing the extracted field with [a] plurality of parameters in order [to] select/provide instructions (col. 3, lines 48-58)". **However, this cited passage fails to disclose that the identifier look-up element <u>comprises</u> a look-up table, as recited in claim 1.**

The Appellant also believes that until dispatch of the Advisory Action, the Examiner had not identified which feature of Henriksson et al. corresponds to the signal handler recited in claim 1 of the Appellants' specification. This point was made in the Appellants' Amendment after the Final Office Action. In the Advisory Action, the Examiner responded by stating that the "protocol processor 12 is the signal handler".

Referring to claim 1, claim 1 recites that the identifier look-up element is "for sending a predetermined program selector to a signal handler upon determination …" Employing the definition of "signal handler" advanced by the Examiner, i.e. the protocol processor 12, in the wording of claim 1, the Examiner asserts that the identifier look-up element is for sending a predetermined program selector to "the protocol processor 12"

upon determination that the identifier portion of a received information unit corresponds to a predetermined identifier associated with the predetermined program selector.

Using this reasoning, the Examiner, by implication, must be suggesting that the field extraction unit 22 and the compare unit 24 (previously argued by the Examiner to correspond to the identifier look-up element) send the predetermined program selector to the protocol processor 12. Clearly, **this is illogical**, because the protocol processor 12 is the "handle" given to a functional block comprising the field extraction unit 22 and the compare unit 24. Hence, this would suggest that the sub-blocks (the field extraction unit 22 and the compare unit 24) are for sending the predetermined program selector to the "umbrella" block comprising the sub-blocks. **It therefore follow that Henriksson et al. does not therefore disclose an identifier look-up element for sending a predetermined program selector to a signal handler, as recited in claim 1**.

In reply to the Final Office Action, the Appellants' also stated that the field extraction unit 22 and the compare unit 24 **do not send** the predetermined program selector. The Advisory Action (lines 8-11) disagrees with the Appellants' submission in this regard. The Advisory Action suggests that, according to col. 3, lines 48-58 of Henriksson et al., Henriksson et al. discloses "extracting a field from the header information and comparing the extracted field with [the] plurality of parameters in order [to] select/provide instructions". However, the instructions obtained by Henriksson et al. are obtained **after reference to a second look-up table**. In this regard, col. 3, lines 48-58 Henriksson et al. (or any other part thereof) **fails to recite that the look-up table element is for sending the predetermined program selector TO a signal handler, as recited in claim 1**.

The Appellants' Response to the Final Office Action also points out that the Examiner was not consistent in relation to consideration of look-up tables in the Final Office Action. In this respect, page 7, lines 1-2 of the Appellants' Amendment after the Final Office Action states that the Final Office Action is not being consistent in applying the same look-up table from Henriksson et al. when referring to all recitals of the same feature of the "look-up table" of claim 1. This point will now be explained in more detail below.

The phrase in contention was: "for storing a list of identifiers" recited in claim 1. The Final Office Action suggested that col. 7, lines 32-33 of Henriksson et al. discloses that:

"*the look-up table stores addresses as a key to provide the corresponding instruction*"

However, col. 7, lines 31-35 of Henriksson et al. refers to the program look-up table 42 having "an address as input and provides an instruction as output" and the PCB 54 containing "several vectors and takes a vector number as input and gives the output as a vector, with all parameters of the specified vector". Clearly, the storage of the addresses to which reference is made at col. 7, lines 32-33 is performed by **the look-up table 42**.

However, in relation to the preceding phrase "said identifier look-up element further comprises a look-up table", the Examiner previously identified the PCB 54 and Fig. 5 of Henriksson et al. as disclosing this feature. **Hence, the Final Office Action identifies different look-up tables from Henriksson et al. to evidence disclosure of separate recitals of the SAME look-up table in claim 1**. Hence, the Examiner is being inconsistent, because the same look-up table from Henriksson et al. should be used to demonstrate disclosure of the same look-up table recited in claim 1.

Referring to the Advisory Action, the Advisory Action suggests that such an approach as is taken by the Examiner is acceptable, because Henriksson et al. discloses:

"*multiple look-up tables in order to output selected instructions, wherein the selected instruction are used to process the second header information (col. 5, lines 4-19)*"

This overlooks the point that a consistent approach needs to be applied when comparing features between Henriksson et al. and claim 1. The Examiner appears to be arbitrarily aggregating the multiple look-up tables. Furthermore, if the Examiner asserts that the PCB 54 of Henriksson et al. constitutes the first recitation in claim 1 of the look-up table, then **the reference to the program look-up table 42 at col. 7, lines 31-35 of Henriksson et al. does not constitute the look-up table for storing a list of identifiers, as recited in claim 1**. The Examiner has used two, different, look-up tables disclosed in Henriksson et al. when comparing recitations of a sole look-up table in claim 1.

Accordingly, for the reasons stated above in relation to the mischaracterization of Henriksson et al., claim 1 is allowable over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Williams et al.

As to claim 1, the Final Office Action states that Williams et al. discloses: "*a method of outputting or selecting an operation code based upon header information where the operation code indicates methods of modifying the data frame (col. 3, lines 11-19).*"

Williams et al. relates to the modification of frames, particularly Ethernet ANSI/IEEE 802.3 frames and the tagging and un-tagging of the frames for use in relation to VLANs (col. 1, lines 41-44 and col. 2, lines 9-11, 20-22, 30-31). Williams et al. teaches a multi-port switch 12 comprising a decision making engine 40 (col. 5, lines 11-13). The decision making engine 40 is referred to as an "internal rules checker" (IRC) that makes frame forwarding decisions for data packets received (col. 5, lines 50-52). The IRC 40 monitors a data bus of the multi-port switch 12 in order to determine a frame pointer value and **the header information of a received packet, including source, destination and VLAN address information** (col. 6, lines 6-9) and uses the header information to determine which MAC ports of the multi-port switch 12 will output the data frame stored at a location specified by the frame pointer (col. 6, lines 9-12). In this respect, the frame received may include a VLAN tag header to identify the frame as information destined to one or more members of a prescribed group of stations (col. 6, lines 22-25). The multi-port switch 12 also comprises an output queue 58 that passes the frame pointer to a de-queuing block 76, which fetches the data frame from the external memory 36 via the external memory interface 44, and supplies the retrieved data frame to the appropriate transmit FIFO of the identified ports (col. 6, lines 49-54).

In relation to manipulation of the VLAN tag, col. 9, line 66 – col. 10, line 4 of Williams et al. explains that for a port-based VLAN, end station software need not be aware of any VLANs. The switch can add a VLAN tag to a frame originating from an end station. The tagged frame can then be passed unaltered from switch to switch until the last switch in the path strips off the VLAN tag before sending it to its destination. According to col. 10, lines 10-14, upon receipt of a frame from one of its input ports, the IRC 40 looks up the destination address (DA) and VLAN combination in the address table to determine the port or ports to which the frame should be forwarded.

The IRC 40 analyzes the header of a data frame to determine the frame type, i.e. whether the frame is untagged, VLAN-tagged, or priority-tagged. The IRC 40 searches an untagged set table for a set of ports that are untagged for a particular VLAN. The IRC 40 then passes a forwarding descriptor that includes the frame type and an operational

code (opcode) to a port vector FIFO logic (PVF) 56. The PFV 56, as shown in FIG. 3 of Williams et al., is responsible for **creating a new opcode** that instructs the dequeuing logic 76 to add, remove, modify the VLAN tag, or send the frame unmodified (col. 10, lines 22-33).

Hence, the multiport switch 12 of Williams et al. provides the capability to support LANs and VLANs, the rules checker (IRC) 40 creating a forwarding descriptor based upon information retrieved from an Untagged Set Table. The forwarding descriptor is then sent to the PVF 56, which modifies the opcode field of the descriptor to embed instructions to the individual dequeuing logic 76. In turn, the dequeuing logic 76 executes the instruction either to add, remove, modify, or not modify a VLAN tag on a per port basis (col. 14, lines 24-33). Thus, according to col. 14, lines 33-36, the multi-port switch 12 can accommodate both tagged and untagged frames in a manner that enhances frame processing efficiently and switch reliability.

As described at col. 1, lines 45-59, the VLAN tag is not part of the data portion of the frame. Indeed, col. 1, lines 60-62 of Williams et al. clearly infers that the VLAN **tag** is part of the header of the frame. Hence, it is very clear that Williams et al. teaches modification of the header of the frame. Consequently, **Williams et al. fails to teach that the program selector defines an operation to be performed on the data portion by the signal handler, as recited in claim 1**.

Furthermore, the Advisory Action states (lines 19-21) that the reason for combining the cited arts, namely Henriksson et al. and Williams et al., is to "select and execute the desired operation on-the-fly so that no need of data buffering [exists]". However, Williams et al. does not teach such an advantage.

In this respect, the above-described explanation of Williams et al. **shows instances where buffering is employed**, for example at col. 2, lines 53-56 and col. 6, lines 49-54. **Hence, the Advisory Action mischaracterizes the benefit of obviating the need for buffering, as temporary storage clearly takes place in the multi-port switch 12 of Williams et al.**

Accordingly, for the reasons stated above in relation to the mischaracterization of Williams et al., claim 1 is allowable over Henriksson et al., Williams et al., and Spaur et al.

iii. Combination of Henriksson et al. and Williams et al. will change the principle of operation of Henriksson et al.

Williams et al. teaches the analysis of the header of a data frame in order to determine whether the frame is untagged, VLAN-tagged, or priority-tagged. In relation to VLAN-tagged frames, the IRC 40 searches an untagged set table in order to obtain, inter alia, an operational code that is then used, in turn, by PVF 56 to create a new operational code that **instructs dequeuing logic 76 to add, remove, modify the VLAN tag, or send the frame unmodified** (col. 10, lines 22-32).

However, in order to arrive at an operational code that results in modification of the header of the data frame, the multi-port switch 12 of Williams et al. implements a two-stage look-up process involving a port vector FIFO opcode table (table 1 of Williams et al.) and an output queue opcode table (table 2 of Williams et al.). This two table approach is central to the functionality of Williams et al. to achieve the manipulation of the data frames, more specifically the header portion thereof, identified by the Examiner as a feature required from Williams et al. In contrast, Henriksson et al. implements three look-up tables, namely a program look-up table 42, a parameter code book (PCB) 54 and a control code book (CCB) 50 (col. 7, lines 13-22 of Henriksson et al.) to achieve the information necessary **to decode "second header information"**.

However, if one of ordinary skill in the art where to contemplate use the two look-up table approach of Williams et al. to modify the protocol processor unit 12 of Henriksson et al., Appellants respectfully submit that one of skill in the art would not implement the dual-tables described in Williams et al. in place of the three tables of Henriksson et al., **because such a combination would change the principle of operation of Henriksson et al. in a fundamental way.**

The technical applications of Henriksson et al. and Williams et al. are very different and so the combined circuit, as suggested by the Final Office Action, **will require a substantial reconstruction and redesign of the elements of Henriksson et al.** as well as change to the principle under which Henriksson et al. was designed to operate. Combination of the teachings of the two documents is **not a trivial modification exercise simply involving replacing the tables of one apparatus with the tables of another apparatus**. In this respect, the content of the PCB 54 of Henriksson et al. results in the output of a vector of parameters, i.e. no opcodes, and hence this is considerably different from the output of opcodes required in respect of both tables of Williams et al.

Consequently, incorporation of the look-up tables of Williams et al. will necessary require a fundamental change to the manner in which the apparatus of Henriksson et al. operates.

Accordingly, one of skill in the art would not make such a combination in that such a combination would change the basic principle of operation of Henriksson et al. See MPEP 2143.01 Subsection entitled "THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE".

Because the above combination would change the basic principle of operation of Henriksson et al., one of skill in the art would have no reason to make such a combination. Thus, claim 1 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

iv. Combination of Henriksson et al. and Williams et al. lacks a feature recited in the claim

As mentioned above, Williams et al. fails to disclose operating on the **data portion** of the data frame. Consequently, if one were to combine the teachings of Henriksson et al. and Williams et al., **the resultant teaching would still fail to teach the program selector defining an operation to be performed on the data portion by the signal handler, as recited in claim 1**.

The combined circuit as suggested by the Final Office Action will therefore not function in the manner claimed, because **no facility will be provided to modify the data portion of the frame. Thus, with such a combination, no processing can take place in respect of the data portion of a received data frame.**

See MPEP 2143.03, Subsection entitled ALL CLAIM LIMITATIONS MUST BE CONSIDERED citing "All words in a claim must be considered in judging the patentability of that claim against the prior art" from In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

It therefore follows that, considering all features of claim 1, the combined teachings of Henriksson et al. and Williams et al. fail to teach all the features of claim 1.

v. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

The reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply:

"*It would have been obvious […] to modify the program selector of Henriksson et al. '586 so that [the] program selector defines an operation to be performed on the data portion by the signal handler, as taught by Williams et al. '586 because it enables to select and execute the desired operation on-the-fly so that no need of data buffering [exists].*" [Emphasis added]

The above reasons are repeated at lines 19-21 of the Advisory Action.

However, as explained above in relation to the mischaracterization of Williams et al., Williams et al. does not teach operating on the data portion. Williams et al. teaches operating on the header portion. In this respect, at page 4, line 21 – page 5, line 1 of the Final Office Action, the Examiner states that Williams et al. indicates methods of modifying the data **frame** (col. 3, lines 11-19). It is submitted that the Examiner has misread claim 1, which clearly states in the final line thereof that the operation is performed on the data portion. This is not the same as operating on the data frame; the data portion is a specific part of the data frame and, in any event, it has been explained above that the modification to the data frame by Williams et al. is performed with respect to the header portion and not the data portion.

Furthermore, Williams et al. does teaches instances where buffering is employed, for example col. 2, lines 53-56 and col. 6, lines 49-54 of Williams et al.

The above reasons advanced by the Examiner are therefore incorrect and so the Final Office Action and the Advisory Action **fail to adequately articulate a sufficient reason for combining the teachings of Henriksson et al. and Williams et al.**

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.,* 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.")

In this matter, the Examiner has failed to demonstrate that Williams et al. teaches an operation being performed on the data portion of the information unit despite effectively arguing so in the reasons to combine set forth in the Final Office Action on pages 4 and 5 thereof. Also, the Examiner has failed to show that the use of the look-up

tables of Williams et al. et al. (or any other feature therefrom) in the apparatus of Henriksson et al. would ensure that buffering is not required, because Williams et al. suggests the need for buffering in order to operate. Hence, it cannot be said that properly articulated reasons have been advanced by the Examiner, because the assertions made, as explained above, are incorrect.

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 1 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

For at least these reasons, claim 1 is allowable over Henriksson et al., Williams et al., and Spaur et al. Also, claims 2-5 and 7-10, are allowable for at least this reason.

Claim 2

Claim 2 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

i. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

In addition to the reasons set forth in the "Claim 1" section above, claim 2 is allowable over Henriksson et al. and Williams et al. and Spaur et al., because the Examiner has failed to establish a sufficient reason why one of skill in the art would combine Henriksson et al. and Williams et al. to create an informational controller wherein the operation to be performed on the data portion can be the creation of a second information unit; merging the data portion, or part of the data portion, with another data portion of a second information unit; or saving the data portion, or part of the data portion, as recited in claim 2.

As stated above in the "Claim 1" section, the Examiner has failed to articulate a sufficient reason why one of skill in the art would modify Henriksson et al. to include the relevant features of Williams et al.

The additional reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply a reference to col. 4, lines 42-44 of Henriksson et al.:

> "*(i.e. – the selected instructions are used to process the second header information, col. 4, lines 42-44)*".

It is respectfully submitted that the reason proposed is insufficient and **not at all articulated**. In this respect, **the only reason given** in the Final Office Action to make the modification is the reference to modification of second header information. Indeed, it is respectfully submitted that this argument is also circular in that it simply attempts to refer to the features recited in claim 2.

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.,* 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The

Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.")

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 2 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Henriksson et al.

Additionally, the Final Office Action mischaracterizes Henriksson et al. In this respect, lines 7-8 on page 6 of the Final Office Action suggest that the types of operation described can be performed on the **data portion**. However, **this is clearly incorrect. Hence, Henriksson et al. fails to teach that the operation to be performed on the data portion can be the creation of a second information unit; or merging the data portion, or part of the data portion, with another data portion of a second information unit; or saving the data portion, or part of the data portion, or recited in claim 2.**

Furthermore, it is also pointed out that neither Williams et al. nor Spaur et al. disclose such operations as suggested in the Final Office Action. In this respect, the Table 2 of Williams et al. simply teaches opcodes for transmission as received, stripping of VLAN tags, insertion of VLAN tags or modification of VLAN tags. **The manipulation described in Williams et al. also relates to the header portion**. Consequently, it is submitted that **Williams et al. fails to teach that the operation to be performed on the data portion can be creation of a second information unit, merging the data portion, or part of the data portion, with another data portion of a second information unit or saving the data portion of part of the data portion, as recited in claim 2**.

Accordingly, claim 2 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

For at least these additional reasons, claim 2 is allowable over Henriksson et al., Williams et al., and Spaur et al.

Claim 3

Claim 3 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

i. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

In addition to the reasons set forth in the "Claim 1" section, claim 3 is allowable over Henriksson et al. and Williams et al. and Spaur et al., because the Examiner has failed to establish a sufficient reason why one of skill in the art would combine Henriksson et al. and Williams et al. to create an information controller comprising a frame transmitter for prioritizing multiple second information units for transmission in accordance with a communication protocol, as recited in claim 3.

As stated above in the "Claim 1" section, the Examiner has failed to articulate a sufficient reason why one of skill in the art would modify Henriksson et al. to include the relevant features of Williams et al.

The additional reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply a reference to col. 10, line 11 of Henriksson et al.:

"*(i.e. – communication channels, col. 10, line 11)*".

It is respectfully submitted that the reason proposed is insufficient and **not at all articulated**. In this respect, **the only reason given** in the Final Office Action to make the modification is the reference to the existence of the communications channel. Such argumentation does not address the existence of multiple second information units spawned from the second information unit or prioritization thereof. Indeed, it is respectfully submitted that this argument is also circular in that it simply attempts to refer to the features recited in claim 5.

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness **cannot be sustained by mere conclusionary statements**; instead, there must be some **articulated** reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.*, 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13,

2007) ("The Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.").

In the present instance, it is also submitted that the mere reference to col. 10, line 11 of Henriksson et al. is conclusionary.

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 3 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Henriksson et al.

Additionally, the Final Office Action mischaracterizes Henriksson et al. In this respect, lines 10-14 on page 6 of the Final Office Action suggest that the Henriksson et al. **discloses prioritization of second information units based upon the disclosure of the communication channels** at col. 10, line 11 of Henriksson et al. However, this is clearly incorrect. It cannot be seen how the existence of communications channels in Henriksson et al. constitute a disclosure of a frame transmitter for **prioritizing** multiple **second** information units, as recited in claim 3.

Furthermore, it is pointed out that neither Williams et al. nor Spaur et al. disclose a frame transmitter for **prioritizing** multiple **second** information units for transmission in accordance with a communication protocol, as recited in claim 3.

Accordingly, claim 3 is allowable over Henriksson et al. and Williams et al. and Spaur et al. for at least this reason.

For at least these additional reasons, claim 3 is allowable over Henriksson et al., Williams et al., and Spaur et al.

Claim 7

Claim 7 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

i. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

In addition to the reasons set forth in the "Claim 1" section, claim 7 is allowable over Henriksson et al. and Williams et al. and Spaur et al., because the Examiner has failed to establish a sufficient reason why one of skill in the art would combine Henriksson et al. and Williams et al. to create an information controller wherein the signal handler further comprises memory for storing said data portion and a predetermined sequence of operations, as recited in claim 7.

As stated above in the "Claim 1" section, the Examiner has failed to articulate a sufficient reason why one of skill in the art would modify Henriksson et al. to include the relevant features of Williams et al.

The additional reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply a reference to col. 8, lines 18-20 of Henriksson et al.

It is respectfully submitted that the reason proposed **is insufficient and not at all articulated**. In this respect, **the only reason given** in the Final Office Action to make the modification is the reference to the existence of a payload memory 16 in Henriksson et al. **Such argumentation does not address the need to store a predetermined sequence of operations**. Indeed, it is respectfully submitted that this argument is also circular in that it simply attempts to refer to the features recited in claim 7.

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.*, 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The

Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.").

In the present instance, it is submitted that the mere reference to col. 8, lines 18-20 of Henriksson et al. is also conclusionary.

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 7 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Henriksson et al.

Additionally, the Final Office Action mischaracterizes Henriksson et al. In this respect, lines 4-7 on page 7 of the Final Office Action suggest that Henriksson et al. discloses, at col. 8, lines 18-20 thereof, storing a predetermined sequence of operations. However, this is clearly incorrect. Furthermore, as set forth in the "Claim 1" Section above, the Examiner asserts that the protocol processor unit 12 is the signal handler as recited in claim 1. Fig. 1 of Henriksson et al. clearly shows that the payload memory 16 is external to the protocol processor unit 12. Consequently, it is submitted that the signal handler/protocol processor unit 12 cannot comprise the payload memory 16. It is therefore submitted that Henriksson et al.. fails to teach that the that the signal handler further comprises memory for storing said data portion and a predetermined sequence of operations, as recited in claim 7.

Furthermore, it is pointed out that neither Williams et al. nor Spaur et al. disclose such features in relation to a signal handler.

Accordingly, claim 7 is allowable over Henriksson et al. and Williams et al. and Spaur et al. for at least this reason.

For at least these additional reasons, claim 7 is allowable over Henriksson et al., Williams et al., and Spaur et al.

Claim 8

Claim 8 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

i. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

In addition to the reasons set forth in the "Claim 1" section, claim 8 is allowable over Henriksson et al. and Williams et al. and Spaur et al., because the Examiner has failed to establish a sufficient reason why one of skill in the art would combine Henriksson et al. and Williams et al. to create an information controller wherein the identifier look-up element is programmable to allow the predetermined identifier and/or the associated program selector to be changed, as recited in claim 8.

As stated above in the "Claim 1" section, the Examiner has failed to articulate a sufficient reason why one of skill in the art would modify Henriksson et al. to include the relevant features of Williams et al.

The additional reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply a reference to col. 6, lines 38-40 of Henriksson et al.

It is respectfully submitted that the reason proposed **is insufficient and not at all articulated**. In this respect, the only reason given in the Final Office Action to make the modification is the reference in Henriksson et al. to the fact that the protocol processor 1 is programmable and configurable in order to satisfy a flexibility demand and functionality specified. Such argumentation does not address the need specifically to provide a programmable look-up element to allow the predetermined identifier and/or the associated program selector to be changed. Indeed, it is respectfully submitted that this argument is also **circular** in that it simply attempts to refer to the features recited in claim 8.

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.*, 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.").

In the present instance, it is submitted that the mere reference to col. 6, lines 38-40 of Henriksson et al. **is also conclusionary**.

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 8 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Henriksson et al.

Additionally, the Final Office Action mischaracterizes Henriksson et al. In this respect, lines 9-13 on page 7 of the Final Office Action suggest that Henriksson et al. discloses, at col. 6, lines 38-40 thereof, the identifier look-up element being programmable. However, this passage from Henriksson et al. simply states that a programmable and configurable protocol processor is required. The passage does not specify which part of the protocol processor needs to be programmable. An arbitrary selection of a part of the protocol processor to be made programmable can have disadvantageous consequences in terms of performance of the protocol processor. Consequently, it is submitted that Henriksson et al. fails to teach that the identifier look-up element is programmable to allow the predetermined identifier and/or the associated program selector to be changed, as recited in claim 8.

Furthermore, it is pointed out that neither Williams et al. nor Spaur et al. disclose such features in relation to the identifier look-up element.

Accordingly, claim 8 is allowable over Henriksson et al. and Williams et al. and Spaur et al. for at least this reason.

For at least these additional reasons, claim 8 is allowable over Henriksson et al., Williams et al., and Spaur et al.

Claim 9

Claim 9 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

i. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

In addition to the reasons set forth in the "Claim 1" section, claim 9 is allowable over Henriksson et al. and Williams et al. and Spaur et al., because the Examiner has failed to establish a sufficient reason why one of skill in the art would combine Henriksson et al. and Williams et al. to create an information controller further comprising a central processor unit interface to allow direct communication between said information controller with a central processing unit, as recited in claim 9.

As stated above in the "Claim 1" section, the Examiner has failed to articulate a sufficient reason why one of skill in the art would modify Henriksson et al. to include the relevant features of Williams et al.

The additional reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply a reference to col. 8, lines 49-51of Henriksson et al.

It is respectfully submitted that the reason proposed is **insufficient and not at all articulated**. In this respect, the only reason given in the Final Office Action to make the modification is the reference in Henriksson et al. to the fact that the method of Henriksson et al. may be implemented in the form of software running on a computer system such as a mainframe, personal computer (PC), handheld computer, etc. Such argumentation does not address the need specifically to provide a central processor interface to allow direct communication between the information controller (In the Final Office Action, the protocol processor 12 is also argued also to be the information controller) with a central processing unit of the communications system. Indeed, it is respectfully submitted that this argument is also **circular** in that it simply attempts to refer to the features recited in claim 9.

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some

articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.*, 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.").

In the present instance, it is submitted that the mere reference to col. 8, lines 49-51 of Henriksson et al. is conclusionary.

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 9 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Henriksson et al.

Additionally, the Final Office Action mischaracterizes Henriksson et al. In this respect, lines 15-19 on page 7 of the Final Office Action suggest that Henriksson et al. discloses, at col. 8, lines 49-51 thereof, the central processor unit interface to allow direct communication between said information controller with a central processing unit of the communication system. Consequently, it is submitted that the teachings of Henriksson et al. fails to teach that the that the information controller further comprises a central processor unit interface to allow direct communication between said information controller with a central processing unit of the communication system, as recited in claim 9.

Furthermore, it is pointed out that neither Williams et al. nor Spaur et al. disclose such features in relation to the information controller.

Accordingly, claim 9 is allowable over Henriksson et al. and Williams et al. and Spaur et al. for at least this reason.

For at least these additional reasons, claim 9 is allowable over Henriksson et al., Williams et al., and Spaur et al.

Claim 10

Claim 10 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

i. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

In addition to the reasons set forth in the "Claim 1" section, claim 10 is allowable over Henriksson et al. and Williams et al. and Spaur et al., because the Examiner has failed to establish a sufficient reason why one of skill in the art would combine Henriksson et al. and Williams et al. to create an information controller wherein said central processing unit can access any memory of the information controller, as recited in claim 10.

As stated above in the "Claim 1" section, the Examiner has failed to articulate a sufficient reason why one of skill in the art would modify Henriksson et al. to include the relevant features of Williams et al.

The additional reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply a reference to col. 6, lines 1-8 of Henriksson et al.

It is respectfully submitted that the reason proposed is **insufficient and not at all articulated**. In this respect, the only reason given in the Final Office Action to make the modification is the reference in Henriksson et al. to the fact that the "claimed architecture can perform most of the deframing on-the-fly" and that the claimed architecture preferably is a co-processor or an accelerator attached to a platform payload processor. Such argumentation does not address the need specifically to provide the central processing unit with access to any memory of the information controller. Indeed, it is respectfully submitted that this argument is also **circular** in that it simply attempts to refer to the features recited in claim 10.

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.*, 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.").

In the present instance, it is submitted that the mere reference to col. 6, lines 1-8 of Henriksson et al. is conclusionary.

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 10 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Henriksson et al.

Additionally, the Final Office Action mischaracterizes Henriksson et al. In this respect, page 7, line 21 – page 8, line 2 of the Final Office Action suggest that Henriksson et al. discloses, at col. 6, lines 1-8 thereof, the central processing unit can access **any** memory of the information controller. Clearly, this passage cited from Henriksson et al. does not disclose this feature. Consequently, it is submitted that the combined teachings of Henriksson et al. and Williams et al. fail to teach that the central processing unit can access any memory of the information controller, as recited in claim 10.

Furthermore, it is pointed out that neither Williams et al. nor Spaur et al. disclose such features in relation to the information controller.

Accordingly, claim 10 is allowable over Henriksson et al. and Williams et al. and Spaur et al. for at least this reason.

For at least these additional reasons, claim 10 is allowable over Henriksson et al., Williams et al., and Spaur et al.

Claim 12

Claim 12 is non obvious under 35 U.S.C. 103(a) over Henriksson et al., Williams et al. and Spaur et al.

Henriksson et al., Williams et al. and Spaur et al., either alone or in combination, do not disclose or suggest a method for using an automotive information controller for an automotive communication system having at least one communication bus and having an information unit with an identifier portion and a data portion corresponding to said identifier portion, said method comprising: receiving the identifier portion at an identifier look-up element, said identifier look-up element comprising a look-up table for storing a list of identifiers; searching the look-up table in order to find a predetermined identifier and a predetermined program selector corresponding to said identifier portion; sending said predetermined program selector to a signal handler upon determination that the identifier portion corresponds to said predetermined identifier associated with the predetermined program selector; and performing an operation on the data portion based upon the program selector, all as recited in claim 12.

Appellants respectfully submit that the Final Office Action dated December 12, 2008 does not set forth a prima facie case of obviousness for claim 12 for at least the reasons as set forth below in subsections i-vi.

i. Final Office Action Mischaracterizes Henriksson et al.

As to claim 12, the Final Office Action states that Henriksson et al. discloses a method of using an information controller (**not automotive**) for a communications system having at least one communication bus (col. 4, lines 9-11) having at least one communication bus and having an information unit with an identifier portion and a data portion corresponding to said identifier portion (col. 3, lines 17-18). The Final Office Action also states that the method of Henriksson et al. comprises the steps of receiving the identifier portion at an identifier look-up element (extracted information is received by a compare unit 24; col. 9, lines 29-31) and said identifier look-up element comprises a look-up table (look-up table 54 in FIG. 5) for storing a list of identifiers (col. 7, lines 32-33). The Final Office Action states that the method of Henriksson et al. also comprises searching the look-up table in order to find a predetermined identifier and a predetermined program selector corresponding to said identifier portion (col. 3, lines 50-

57). The Final Office Action also argues that Henriksson et al. also teaches sending said predetermined program selector to a signal handler upon determination that the identifier portion corresponds to said predetermined identifier associated with the predetermined program selector (col. 4, lines 36-44).

This reasoning is similar to that set forth by the Examiner in relation to claim 1 with the exception that, in relation to claim 12, the Examiner has not asserted that the field extraction unit 22 **in combination with** the compare unit 24 constitutes the identifier look-up element.

In the Amendment after the Final Office Action of February 12, 2009, the Appellants argued that many of the arguments put forward by the Examiner were incorrect. Of the arguments submitted by the Appellants, a number of submissions by the Appellants were disputed by the Examiner in the Advisory Action in relation to claim 1. These are set out below, but in the context of claim 12 as the Appellants' arguments are nevertheless still pertinent in support of the patentability of claim 12.

In the Amendment after the Final Office Action of February 12, 2009, Appellants argued that neither the field extraction unit 22 nor the compare unit 24 possess look-up functionality. In relation to claim 12, the Examiner decided to rely solely upon the compare unit 24 as a teaching of the feature of receipt of the identifier portion at an identifier look-up element, it is submitted that while the act of receipt takes place at the compare unit 24, it is very clear that the compare unit 24 does not constitute a look-up element of any kind. In this respect, the compare unit 24 is not a look-up element, it is a comparison element. The Examiner has failed to recognize or acknowledge that the act of "look-up" is more than just simple comparison and that a "larger" activity needs to be carried out beyond simple comparison in relation to seeking a particular entry in a look-up table. Indeed, it is very clear from FIG. 5 of Henriksson et al. that the PCB 54 is a look-up table **with program**. It logically follows that any look-up function is performed in order to provide an input to the compare unit 24 and that Henriksson et al. does not contemplate the act of look-up being performed by the compare unit 24 as the compare unit 24 is simply comparing the output of the look-up table with program (PCB) 54 with the value from the field extraction (see FIG. 5 of Henriksson et al.), i.e. the look-up is performed by the look-up table with program 54. **Hence, the feature identified by the Examiner as the identifier look-up element is not a look-up element and so Henriksson et al. fails to teach the feature of the identifier look-up element, as recited in claim 12**. Furthermore, as the compare unit 24 is simply just that, a compare

unit, and for reasons of lack of disclosure in Henriksson et al., it is submitted that Henriksson et al. and in particular the PCB 54 identified by the Examiner **does not constitute teaching of the compare unit 24 comprising a look-up table**; the identification of the compare unit 24 by a dashed line box confirms this fact. Consequently**, Henriksson et al. fails to disclose an identifier look-up element and that, moreover, Henriksson et al. fails to disclose that the identifier look-up element comprises a look-up table, as recited in claim 12.**

The Appellant also believes that until dispatch of the Advisory Action, the Examiner had not identified which feature of Henriksson et al. corresponds to the signal handler recited in claim 1 of the Appellants' specification. This point was made in the Appellants' Amendment after the Final Office Action. In the Advisory Action, the Examiner responded by stating that the "protocol processor 12 is the signal handler".

Referring to claim 12, claim 12 recites that the identifier look-up element is "for sending a predetermined program selector to a signal handler upon determination …" Employing the definition of "signal handler" advanced by the Examiner, i.e. the protocol processor 12, in the wording of claim 12, the Examiner asserting that the identifier look-up element is for sending a predetermined program selector to "the protocol processor 12" upon determination that the identifier portion of a received information unit corresponds to a predetermined identifier associated with the predetermined program selector.

Using this reasoning, the Examiner, by implication, must be suggesting that the compare unit 24 (previously argued by the Examiner to correspond to the identifier look-up element) sends the predetermined program selector to the protocol processor 12. Clearly, **this is illogical**, because the protocol processor 12 is the "handle" given to a functional block comprising the compare unit 24. Hence, this would suggest that the sub-block (the compare unit 24) is for sending the predetermined program selector to the "umbrella" block comprising the sub-blocks. **Clearly, Henriksson et al. does not therefore disclose sending a predetermined program selector to a signal handler after searching the look-up table of the identifier look-up element, as recited in claim 12**.

The Appellants' Response to the Final Office Action also points out that the Examiner was not consistent in relation to consideration of look-up tables in the Final Office Action. In this respect, page 7, lines 1-2 of the Appellants' Amendment after the Final Office Action states that the Final Office Action is not being consistent in applying

the same look-up table from Henriksson et al. when referring to all recitals of the same feature of the "look-up table" of claim 1. This point will now be explained in more detail below.

The phrase in contention was: "for storing a list of identifiers" also recited in claim 12. Quoting the Final Office Action, it suggested that col. 7, lines 32-33 of Henriksson et al. discloses that:

> "*the look-up table stores addresses as a key to provide the corresponding instruction*"

However, col. 7, lines 31-35 of Henriksson et al. refers to the program look-up table 42 having "an address as input and provides an instruction as output" and the PCB 54 containing "several vectors and takes a vector number as input and gives the output as a vector, with all parameters of the specified vector". Clearly, the storage of the addresses to which reference is made at col. 7, lines 32-33 is performed by **the look-up table 42**.

However, in relation to the preceding phrase "said identifier look-up element further comprises a look-up table", the Examiner previously identified the PCB 54 and Fig. 5 of Henriksson et al. as disclosing this feature. **Hence, the Final Office Action identifies different look-up tables from Henriksson et al. to evidence disclosure of separate recitals of the SAME look-up table in claim 12**. Hence, the Examiner is being inconsistent, because the same look-up table from Henriksson et al. should be used to demonstrate disclosure of the same look-up table recited in claim 12.

Referring to the Advisory Action, the Advisory Action suggests that such an approach as is taken by the Examiner is acceptable, because Henriksson et al. discloses:

> "*multiple look-up tables in order to output selected instructions, wherein the selected instruction are used to process the second header information (col. 5, lines 4-19)*"

This overlooks the point that a consistent approach needs to be applied when comparing features between Henriksson et al. and claim 12. The Examiner appears to be arbitrarily aggregating the multiple look-up tables. Furthermore, if the Examiner asserts that the PCB 54 of Henriksson et al. constitutes the first recitation in claim 12 of the look-up table, then **the reference to the program look-up table 42 at col. 7, lines 31-35 of Henriksson et al. does not constitute the look-up table for storing a list of identifiers, as recited in claim 12**. The Examiner has used two, different, look-up

tables disclosed in Henriksson et al. when comparing recitations of a sole look-up table in claim 12.

Accordingly, for the reasons stated above in relation to the mischaracterization of Henriksson et al., claim 12 is allowable over Henriksson et al., Williams et al., and Spaur et al.

ii. Final Office Action Mischaracterizes Williams et al.

As to claim 1, the Final Office Action states that Williams et al. discloses: "*a method of outputting or selecting an operation code based upon header information where the operation code indicates methods of modifying the data frame (col. 3, lines 11-19).*"

Williams et al. relates to the modification of frames, particularly Ethernet ANSI/IEEE 802.3 frames and the tagging and un-tagging of the frames for use in relation to VLANs (col. 1, lines 41-44 and col. 2, lines 9-11, 20-22, 30-31). Williams et al. teaches a multi-port switch 12 comprising a decision making engine 40 (col. 5, lines 11-13). The decision making engine 40 is referred to as an "internal rules checker" (IRC) that makes frame forwarding decisions for data packets received (col. 5, lines 50-52). The IRC 40 monitors a data bus of the multi-port switch 12 in order to determine a frame pointer value and **the header information of a received packet, including source, destination and VLAN address information** (col. 6, lines 6-9) and uses the header information to determine which MAC ports of the multi-port switch 12 will output the data frame stored at a location specified by the frame pointer (col. 6, lines 9-12). In this respect, the frame received may include a VLAN tag header to identify the frame as information destined to one or more members of a prescribed group of stations (col. 6, lines 22-25). The multi-port switch 12 also comprises an output queue 58 that passes the frame pointer to a de-queuing block 76, which fetches the data frame from the external memory 36 via the external memory interface 44, and supplies the retrieved data frame to the appropriate transmit FIFO of the identified ports (col. 6, lines 49-54).

In relation to manipulation of the VLAN tag, col. 9, line 66 – col. 10, line 4 of Williams et al. explains that for a port-based VLAN, end station software need not be aware of any VLANs. The switch can add a VLAN tag to a frame originating from an end station. The tagged frame can then be passed unaltered from switch to switch until the last switch in the path strips off the VLAN tag before sending it to its destination. According to col. 10, lines 10-14, upon receipt of a frame from one of its input ports, the

IRC 40 looks up the destination address (DA) and VLAN combination in the address table to determine the port or ports to which the frame should be forwarded.

The IRC 40 analyzes the header of a data frame to determine the frame type, i.e. whether the frame is untagged, VLAN-tagged, or priority-tagged. The IRC 40 searches an untagged set table for a set of ports that are untagged for a particular VLAN. The IRC 40 then passes a forwarding descriptor that includes the frame type and an operational code (opcode) to a port vector FIFO logic (PVF) 56. The PFV 56, as shown in FIG. 3 of Williams et al., is responsible for **creating a new opcode** that instructs the dequeuing logic 76 to add, remove, modify the VLAN tag, or send the frame unmodified (col. 10, lines 22-33).

Hence, the multiport switch 12 of Williams et al. provides the capability to support LANs and VLANs, the rules checker (IRC) 40 creating a forwarding descriptor based upon information retrieved from an Untagged Set Table. The forwarding descriptor is then sent to the PVF 56, which modifies the opcode field of the descriptor to embed instructions to the individual dequeuing logic 76. In turn, the dequeuing logic 76 executes the instruction either to add, remove, modify, or not modify a VLAN tag on a per port basis (col. 14, lines 24-33). Thus, according to col. 14, lines 33-36, the multi-port switch 12 can accommodate both tagged and untagged frames in a manner that enhances frame processing efficiently and switch reliability.

As described at col. 1, lines 45-59, the VLAN tag is not part of the data portion of the frame. Indeed, col. 1, lines 60-62 of Williams et al. clearly infers that the VLAN **tag** is part of the header of the frame. Hence, it is very clear that Williams et al. teaches modification of the header of the frame. Consequently, **Williams et al. fails to teach that the program selector defines an operation to be performed on the data portion by the signal handler, as recited in claim 12**.

Furthermore, the Advisory Action states (lines 19-21) that the reason for combining the cited arts, namely Henriksson et al. and Williams et al., is to "select and execute the desired operation on-the-fly so that no need of data buffering [exists]". However, Williams et al. does not teach such an advantage.

In this respect, the above-described explanation of Williams et al. **shows instances where buffering is employed**, for example at col. 2, lines 53-56 and col. 6, lines 49-54. **Hence, the Advisory Action mischaracterizes the benefit of obviating the need for buffering, as temporary storage clearly takes place in the multi-port switch 12 of Williams et al.**

Accordingly, for the reasons stated above in relation to the mischaracterization of Williams et al., claim 12 is allowable over Henriksson et al., Williams et al., and Spaur et al.

iii. Combination of Henriksson et al. and Williams et al. will change the principle of operation of Henriksson et al.

Williams et al. teaches the analysis of the header of a data frame in order to determine whether the frame is untagged, VLAN-tagged, or priority-tagged. In relation to VLAN-tagged frames, the IRC 40 searches an untagged set table in order to obtain, inter alia, an operational code that is then used, in turn, by PVF 56 to create a new operational code that **instructs dequeuing logic 76 to add, remove, modify the VLAN tag, or send the frame unmodified** (col. 10, lines 22-32).

However, in order to arrive at an operational code that results in modification of the header of the data frame, the multi-port switch 12 of Williams et al. implements a two-stage look-up process involving a port vector FIFO opcode table (table 1 of Williams et al.) and an output queue opcode table (table 2 of Williams et al.). This two table approach is central to the functionality of Williams et al. to achieve the manipulation of the data frames, more specifically the header portion thereof, identified by the Examiner as a feature required from Williams et al. In contrast, Henriksson et al. implements three look-up tables, namely a program look-up table 42, a parameter code book (PCB) 54 and a control code book (CCB) 50 (col. 7, lines 13-22 of Henriksson et al.) to achieve the information necessary **to decode "second header information"**.

However, if one of ordinary skill in the art where to contemplate use the two look-up table approach of Williams et al. to modify the protocol processor unit 12 of Henriksson et al., Appellants respectfully submit that one of skill in the art would not implement the dual-tables described in Williams et al. in place of the three tables of Henriksson et al., **because such a combination would change the principle of operation of Henriksson et al. in a fundamental way.**

The technical applications of Henriksson et al. and Williams et al. are very different and so the combined circuit, as suggested by the Final Office Action, **will require a substantial reconstruction and redesign of the elements of Henriksson et al.** as well as change to the principle under which Henriksson et al. was designed to operate. Combination of the teachings of the two documents is **not a trivial modification exercise simply involving replacing the tables of one apparatus with**

the tables of another apparatus. In this respect, the content of the PCB 54 of Henriksson et al. results in the output of a vector of parameters, i.e. no opcodes, and hence this is considerably different from the output of opcodes required in respect of both tables of Williams et al.

Consequently, incorporation of the look-up tables of Williams et al. will necessary require a fundamental change to the manner in which the apparatus of Henriksson et al. operates.

Accordingly, one of skill in the art would not make such a combination in that such a combination would change the basic principle of operation of Henriksson et al. See MPEP 2143.01 Subsection entitled "THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE".

Because the above combination would change the basic principle of operation of Henriksson et al., one of skill in the art would have no reason to make such a combination. Thus, claim 12 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

iv. Combination of Henriksson et al. and Williams et al. will not teach al features of the claim

As mentioned above, Williams et al. fails to disclose operating on the **data portion** of the data frame. Consequently, if one were to combine the teachings of Henriksson et al. and Williams et al., **the resultant teaching would still fail to teach performance of an operation on the data portion, as recited in claim 12**.

The combined circuit as suggested by the Final Office Action will therefore not function in manner claimed, because **no facility will be provided to modify the data portion of the frame. Thus, with such a combination, no processing can take place in respect of the data portion of a received data frame.**

See MPEP 2143.03, Subsection entitled ALL CLAIM LIMITATIONS MUST BE CONSIDERED citing "All words in a claim must be considered in judging the patentability of that claim against the prior art" from In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

It therefore follows that, considering all features of claim 12, the combined teachings of Henriksson et al. and Williams et al. fail to teach all the features of claim 12.

v. Reason given for combination of Henriksson et al. and Williams et al. is insufficient

The reason given in the Final Office Action for combining Henriksson et al. with Williams et al. is simply:

> "… i*t would have been obvious […] to modify the program selector of Henriksson et al. '586 in order to perform an operation on the data portion based upon the program selector, as taught by Williams et al. '586 because it enables to select and execute the desired operation on-the-fly so that no need of data buffering [exists].*" [Emphasis added]

However, as explained above in relation to the mischaracterization of Williams et al., Williams et al. does not teach operating on the data portion. Williams et al. teaches operating on the header portion. In this respect, at page 9, lines 13-16 of the Final Office Action, the Examiner states that Williams et al. indicates methods of modifying the data **frame** (col. 3, lines 11-19). It is submitted that the Examiner has misread claim 12, which clearly states in the final line thereof that the operation is performed on the data portion. This is not the same as operating on the data frame; the data portion is a specific part of the data frame and, in any event, it has been explained above that the modification to the data frame by Williams et al. is performed with respect to the header portion and not the data portion.

Furthermore, Williams et al. does teaches instances where buffering is employed, for example col. 2, lines 53-56 and col. 6, lines 49-54 of Williams et al.

The above reasons advanced by the Examiner are therefore incorrect and so the Final Office Action and the Advisory Action **fail to adequately articulate a sufficient reason for combining the teachings of Henriksson et al. and Williams et al.**

See MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR Int'l v. Teleflex, Inc.,* 550 U.S. 127, 82 USPQ2d at 1396 (2007). See also *Ex parte Penhasi*, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter.")

In this matter, the Examiner has failed to demonstrate that Williams et al. teaches an operation being performed on the data portion of the information unit despite effectively arguing so in the reasons to combine set forth in the Final Office Action on pages 9 and 10 thereof. Also, the Examiner has failed to show that the use of the look-up tables of Williams et al. et al. (or any other feature therefrom) in the apparatus of Henriksson et al. would ensure that buffering is not required, because Williams et al. suggests the need for buffering in order to operate. Hence, it cannot be said that properly articulated reasons have been advanced by the Examiner, because the assertions made, as explained above, are incorrect.

Accordingly, the reason provided by the Examiner for combining the references is insufficient for establishing prima facie obviousness. Thus, claim 12 is non-obvious over Henriksson et al., Williams et al., and Spaur et al.

For at least these reasons, claim 12 is allowable over Henriksson et al., Williams et al., and Spaur et al.

CONCLUSION

For at least the reasons set forth above, Appellants respectfully submit that the claims of the present application are allowable over the art cited during prosecution.

Respectfully submitted,

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Claims Appendix

1. (Previously presented) An automotive information controller for an automotive communication system having at least one communication bus having an information unit with an identifier portion and a data portion corresponding to said identifier portion, said information controller comprising an identifier look-up element for sending a predetermined program selector to a signal handler upon determination that the identifier portion of a received information unit corresponds to a predetermined identifier associated with the predetermined program selector, wherein

the program selector defines an operation to be performed on the data portion by the signal handler; and

said identifier look-up element further comprises a look-up table for storing a list of identifiers, said identifier look-up element searching the look-up table in order to find said predetermined identifier and said predetermined program selector corresponding to said identifier portion.

2. (Original) An information controller as claimed in claim 1, wherein the operation to be performed on the data portion can be the creation of a second information unit; or merging the data portion, or part of the data portion, with another data portion of a second information unit; or saving the data portion, or part of the data portion.

3. (Original) An information controller as claimed in claim 2, further comprising a frame transmitter for prioritizing multiple second information units for transmission in accordance with a communication protocol.

4. (Original) An information controller as claimed in claim 3, wherein the second information units include a second identifier.

5. (Previously presented) An information controller as claimed in claim 3, further comprising a transmission memory for storing multiple second information units.

6. (Canceled)

7. (Previously presented) An information controller as claimed in claim 1, wherein the signal handler further comprises memory for storing said data portion and a predetermined sequence of operations.

8. (Previously presented) An information controller as claimed in claim 1, wherein the identifier look-up element is programmable to allow the predetermined identifier and/or the associated program selector to be changed.

9. (Previously presented) An information controller as claimed in claim 1, further comprising a central processor unit interface to allow direct communication between said information controller with a central processing unit of the communication system.

10. (Previously presented) An information controller as claimed in claim 9, wherein said central processing unit can access any memory of the information controller.

11. (Canceled)

12. (Previously presented) A method for using an automotive information controller for an automotive communication system having at least one communication bus and having an information unit with an identifier portion and a data portion corresponding to said identifier portion, said method comprising:

receiving the identifier portion at an identifier look-up element, said identifier look-up element comprising a look-up table for storing a list of identifiers;

searching the look-up table in order to find a predetermined identifier and a predetermined program selector corresponding to said identifier portion;

sending said predetermined program selector to a signal handler upon determination that the identifier portion corresponds to said predetermined identifier associated with the predetermined program selector;

performing an operation on the data portion based upon the program selector.

Evidence Appendix

No evidence is submitted in this appendix.

Related proceedings Appendix

There are no decisions under this appendix.

Table of Cases